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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/532,029	04/21/2005	Zdenek Krulis	J126-021 US	8328

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EXAMINER	
BOYKIN, TERRESSA M	

ART UNIT	PAPER NUMBER
1711	

DATE MAILED: 10/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/532,029	KRULIS ET AL.	
	Examiner	Art Unit	
	Terressa M. Boykin	1711	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 February 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3 are rejected under 35 U.S.C. 102(e) as being anticipated by USP 6784233 cols. 1-5 and claims 1,2,3,4,

USP 6784233 discloses a thermoplastic molding compound that contain A) 1 to 97.85% by weight of at least one thermoplastic polyester, B) 1 to 97.85% by weight of at least one polycarbonate, C) 1 to 50% by weight of a rubber-elastic polymer, D) 0.1 to 5% by weight of a phosphorous stabilizer, E) 0.05 to 2% by weight of an organic acid, F) 0 to 60% by weight of further additives. The weight percentages of the components A) to F) add up to 100%.

The reference relates to thermoplastic molding compositions comprising A) from 1 to 97.85% by weight of at least one thermoplastic polyester, B) from 1 to 97.85% by weight of at least one polycarbonate, C) from 1 to 50% by weight of an elastomeric polymer, D) from 0.1 to 5% by weight of a phosphorus-containing stabilizer, E) from 0.05 to 2% by weight of an organic acid, and F) from 0 to 60% by weight of other additives,

It is an object of the reference to provide polyester-polycarbonate blends which have improved processing stability and mechanical properties. In particular, heat resistance and melt stability for long cycle times should be improved.

The molding compositions comprise, as component (A), from 5 to 97.85% by weight, preferably from 10 to 92.7% and in particular from 12.5 to 89.85% by weight, of a thermoplastic polyester.

Use is generally made of polyesters A) based on aromatic dicarboxylic acids and on an aliphatic or aromatic dihydroxy compound.

Polyalkylene terephthalates of this type are known per se and are described in the literature. Their main chain contains an aromatic ring which derives from the aromatic dicarboxylic acid. There may also be substitution of the aromatic ring, e.g. by halogen, such as chlorine or bromine, or by C1 -C4 -alkyl, such as methyl, ethyl, iso- or n-propyl, or n-, iso- or tert-butyl.

These polyalkylene terephthalates may be prepared by reacting aromatic dicarboxylic acids, or their esters or other ester-forming derivatives, with aliphatic dihydroxy compounds.

Preferred dicarboxylic acids are 2,6-naphthalenedicarboxylic acid, terephthalic acid and isophthalic acid, and mixtures of these. Up to 30 mol %, preferably not more than 10 mol %, of the aromatic dicarboxylic acids may be replaced by aliphatic or cycloaliphatic dicarboxylic acids, such as adipic acid, azelaic acid, sebacic acid, dodecanedioic acids and cyclohexanedicarboxylic acids.

The viscosity number of the polyesters (A) is generally in the range from 50 to 220, preferably from 80 to 160 (measured in a 0.5% strength by weight solution in a phenol/o-dichlorobenzene mixture in a weight ratio of 1:1 at 25 C.

Particularly preferred molding compositions comprise, as component A), a mixture of polyesters which are different from PBT, for example polyethylene terephthalate (PET). The proportion e.g. of the polyethylene terephthalate in the mixture is preferably up to 50% by weight, in particular from 10 to 30% by weight, based on 100% by weight of A).

It is also advantageous to use recycled PET materials (also termed scrap PET), if desired in a mixture with polyalkylene terephthalates, such as PBT.

Recycled materials are generally: 1) those known as post-industrial recycled materials: these are production wastes during polycondensation or during processing, e.g. sprues from injection molding, start-up material from injection molding or extrusion, or edge trims from extruded sheets or films. 2) post-consumer recycled materials: these are plastic items which are collected and treated after utilization by the end consumer. Blow-molded PET bottles for mineral water, soft drinks and juices are easily the predominant items in terms of quantity.

Both types of recycled material may be used either as ground material or in the form of pellets. In the latter case, the crude recycled materials are isolated and purified and then melted and pelletized using an extruder. This usually facilitates handling and free flow, and metering for further steps in processing.

Another group to be mentioned is that of fully aromatic polyesters deriving from aromatic dicarboxylic acids and aromatic dihydroxy compounds.

Suitable aromatic dicarboxylic acids are the compounds previously mentioned for the polyalkylene terephthalates. The mixtures preferably used are made from 5 to 100 mol % of isophthalic acid and from 0 to 95 mol % of terephthalic acid, in particular from about 50 to about 80% of terephthalic acid and from 20 to about 50% of isophthalic acid.

It is, of course, also possible to use mixtures of polyalkylene terephthalates and fully aromatic polyesters. These generally comprise from 20 to 98% by weight of

the polyalkylene terephthalate and from 2 to 80% by weight of the fully aromatic polyester.

Other suitable components B) which may be mentioned are amorphous polyester carbonates, where phosgene has been replaced by aromatic dicarboxylic acid units, such as isophthalic acid and/or terephthalic acid units, during the preparation.

These are very generally copolymers which have preferably been built up from at least two of the following monomers : ethylene, propylene, butadiene, isobutene, isoprene, chloroprene, vinyl acetate, styrene, acrylonitrile and acrylates and/or methacrylates having from 1 to 18 carbon atoms in the alcohol component.

Preferred types of such elastomers are those known as ethylene-propylene (EPM) and ethylene-propylene-diene (EPDM) rubbers.

Examples which may be mentioned of diene monomers for EPDM rubbers are conjugated dienes, such as isoprene and butadiene, non-conjugated dienes having from 5 to 25 carbon atoms, such as 1,4-pentadiene, 1,4-hexadiene, 1,5-hexadiene, 2,5-dimethyl-1,5-hexadiene and 1,4-octadiene, cyclic dienes, such as cyclopentadiene, cyclohexadienes, cyclooctadienes and dicyclopentadiene, and also alkenylnorbornenes, such as 5-ethylidene-2-norbornene, 5-butylidene-2-norbornene, 2-methallyl-5-norbornene and 2-isopropenyl-5-norbornene, and tricyclodienes etc.

Polyolefin copolymers obtainable by polymerizing in the presence of a metallocene catalyst are also suitable.

Monomers which may be mentioned here, merely as examples, for the preparation of the rubber fraction of the elastomers are acrylates, such as n-butyl acrylate and 2-ethylhexyl acrylate, and corresponding methacrylates, and butadiene and isoprene, and also mixtures of these. These monomers may be copolymerized with other monomers, such as styrene, acrylonitrile, vinyl ethers and with other acrylates or methacrylates, such as methyl methacrylate, methyl acrylate, ethyl acrylate or propyl acrylate.

If one or more hard components (with glass transition temperatures above 20 C.) are involved, besides the rubber phase, in the structure of the elastomer, these are generally prepared by polymerizing, as principal monomers, styrene, acrylonitrile, methacrylonitrile, .alpha.-methylstyrene, p-methylstyrene, or acrylates or methacrylates, such as methyl acrylate, ethyl acrylate or methyl methacrylate. Besides these, it is also possible to use relatively small proportions of other comonomers.

The particles of the rubber phase may also have been crosslinked. Examples of crosslinking monomers are 1,3-butadiene, divinylbenzene, diallyl phthalate and dihydrodicyclopentadienyl acrylate, and also the compounds.

Examples of preferred emulsion polymers are n-butyl acrylate-(meth)acrylic acid copolymers, n-butyl acrylate-glycidyl acrylate or n-butyl acrylate-glycidyl methacrylate copolymers, graft polymers with an inner core made from n-butyl acrylate or based on butadiene and with an outer envelope made from the abovementioned copolymers, and copolymers of ethylene with comonomers which supply reactive groups.

According to the invention the molding compositions comprise, as component E), an organic acid or a mixture of two or more different organic acids, in particular low-molecular-weight halogen-free acids. The proportion of this component in the molding compositions is generally from 0.05 to 2% by weight, preferably from 0.1 to 1.8% by weight, in particular from 0.1 to 1.5% by weight, based on the total weight of the molding compositions.

Preference is given to the use of organic acids, which may be aromatic or else aliphatic. It is also possible to use aliphatic -aromatic acids. Preferred acids include palmitic acid, stearic acid, benzoic acid, isophthalic acid, terephthalic acid, trimellitic acid, sulfonic acids, such as p-toluenesulfonic acid, fumaric acid, citric acid, mandelic acid and tartaric acid.

The fibrous fillers may have been surface-pretreated with a silane compound to improve compatibility with the thermoplastic.

The novel thermoplastic molding compositions may comprise, as component F), conventional processing aids, such as stabilizers, oxidation retarders, agents to counter thermal decomposition and decomposition by ultraviolet light, lubricants, mold-release agents, colorants, such as dyes and pigments, nucleating agents, plasticizers, etc.

Examples of oxidation retarders and heat stabilizers are sterically hindered phenols and/or phosphites, hydroquinones, aromatic secondary amines, such as diphenylamines, various substituted representatives of these groups and mixtures of these in concentrations of up to 1% by weight, based on the weight of the thermoplastic molding compositions. These differ from B).

The thermoplastic molding compositions may be prepared by processes known per se, by mixing the starting components in conventional mixing equipment, such as screw extruders, Brabender mixers or Banbury mixers, and then extruding. The extrudate may be cooled and comminuted. It is also possible to premix individual components and then to add the remaining starting materials to these, individually and/or likewise mixed. Mixing temperatures are generally from 230 to 290 C.

In a preferred method of operation, the components B) to E) and also, if desired, conventional additives F) may be mixed with a polyester prepolymer, compounded and pelletized. The resultant pellets are then condensed to the

desired viscosity in the solid phase under an inert gas, continuously or batchwise, at below the melting point of component A).

In another preferred method of operation, components A) and D) are compounded in advance as the masterbatch (concentrate) and then mixed in a usual manner with the other components.

The novel thermoplastic molding compositions have a good combination of mechanical properties, in particular toughness, flowability and melt stability. They are suitable for producing fibers, films or moldings, in particular for applications in the motor vehicle sector and electronics sector, and also as household products or devices in medical engineering.

Type Monomers for the core Monomers for the envelope I 1,3-butadiene, isoprene, styrene, acrylonitrile, methyl n-butyl acrylate, methacrylate ethylhexyl acrylate or mixtures of these II as I, but with concomitant as I use of crosslinking agents III as I or II n-butyl acrylate, ethyl acrylate, methyl acrylate, 1,3-butadiene, isoprene, ethylhexyl acrylate IV as I or II as I or III, but with concomitant use of monomers with reactive groups as described herein V styrene, acrylonitrile, first envelope made of monomers methyl methacrylate or as described in I and II for mixtures of these the core second envelope as described in I or IV for the envelope

Methyl methacrylate -butadiene-styrene graft rubber with a three-shell structure (polybutadiene core, polystyrene shell, PMMA shell), composed of 15.6% by weight of methyl methacrylate, 16.7% by weight of styrene and 67% by weight of butadiene.

Thus, the references discloses a recycled plastic process from the same components as claimed by applicants. The use of a batch kneader and screw extruder is extremely common in the art of thermoplastic material especially with regard to molding or recycled plastic material. Since the disclosed amounts, i.e. wt %, etc. are expressed differently , they nevertheless appear to overlap those claimed and thus are not distinguishable over the prior art. In view of the above, there appears to be no significant difference between the reference(s)and that which is claimed by applicant(s). Any differences not specifically mentioned appear to be conventional. Consequently, the claimed invention cannot be deemed as novel and accordingly is unpatentable.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Terressa M. Boykin whose telephone number is 571 272-1069. The examiner can normally be reached on Monday-Thursday 10-5:30 Friday (work at home).

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Terressa M. Boykin
Primary Examiner
Art Unit 1711

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